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Special Article

The New Role of Medical Education Within Higher Education in the United States

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IT IS A PLEASURE TO PARTICIPATE in this meeting of the California Academy of Medicine and a particular pleasure to respond to an invitation extended to me through my very good friend, Dr. Morton Meyer. Also, it is always a happy occasion when so many people get together who have connections with the University of California and with Stanford. I have had a chance to see higher education around the United States and, to some extent, around the world, and there are very few places where there is such an excellent relationship between two leading universities in the same community. It is rather remarkable not only that there is this good relationship but that here in the Bay Area we should have two of the half-dozen leading universities in the United States. And I know of no area in the world where such a great city and two such great universities have had such supportive relationships among themselves.

My comments are under the title of "The New Role of Medical Education within Higher Education in the United States." I would like to speak first of all about the current state of higher education and then turn to medical education within it. Higher education in the United States has just ended its "Golden Century." This century lasted from about 1870 to about 1970. During that period of time, higher education grew phenomenally. Back in 1870 there were fewer students in all the institutions of higher education than there are now in the University of California alone. Currently, we have about eight million students in higher education and by the end of this decade it will be eleven or twelve million. In 1870, 2 percent of the young people went to college; it is now 50 percent and our Commission is estimating that by the end of the century it will be 66-2/3 percent—two out of every three young people going to some form of post-secondary education. Beyond this fantastic growth in numbers, which can never be repeated again, has been a very great growth in performance. In 1870 the standard institution was a classical college—a four-year college giving the same curriculum to all of its students. Now, in the early 1970s, we have the great modern university, drawing students from homes across the nation and carrying on endeavors which affect almost every person in the United States.

The first great force at work over the last century in creating our modern system of higher education was a great surge of populism, insisting on service to more and more people in more and more ways. The second great force was the introduction of science. The first professor in science was at Yale in 1800, but it was not until about 1870 that science began to expand. Along

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with science, of course, came research on a larger and larger scale, and graduate training. And out of research came service activities to industry and to agriculture and to the government.

Deep Trouble for Higher Education

One of the great success stories of all human effort on this planet has been the rise of higher education in the United States in the last century. But it is now in deep trouble—probably the deepest trouble higher education has been in since it began, with the founding of Harvard, in 1636. This trouble will not be fatal but for many institutions it is quite severe. The trouble comes from a number of different sources. I will only mention a few.

First of all, there was the student unrest of the 1960's. While we are temporarily going through a period of cessation of that unrest, I think it would be quite unwise for anyone to think that we will never again see student unrest in this country, that we are back to the period of the 1950's and that period will go on forever. As I go around the country and visit a good many campuses, my impression is that, while the students at the moment are not engaged in dissent and disruption as they were a few years back, they are no more satisfied with the state of the United States or the state of the world than they were a few years ago. It is hard to explain why all of a sudden there is this period of inactivity after the period of greatest activism by students in American history; but we do have this period of inactivity at the moment. I think it would be a very foolish person, however, who would say that never again will the students become active on our campuses. The student activism that upset our campuses, also upset the American public in a rather dramatic way.

Beyond the student unrest of recent years, we may be entering into a really new period of human life—something like the change in mentality that took place when the Renaissance came to Europe; or the change in mentality that accompanied the American and the French revolutions, bringing the idea of democracy for the common man. In all of the industrialized nations, we are now going through a "cultural revolution." It is hard to say yet how long it will last and how deeply it will affect our society. In all industrial societies, there is a new emphasis upon the sensate—upon immediate gratification. A long time ago I read an essay by John Maynard Keynes which impressed me very much. It was an essay called "Prospects for Our Grandchildren." And the length of time which has passed since Keynes wrote this essay means that the grandchildren that he was talking about are now here. He said that, as society became more affluent, there would be less emphasis upon saving for the future and preparing for the future; there would be more emphasis upon getting what you could at that moment of time; there would be a diminution in the emphasis on the work ethic which has been so related to the rise of the industrial system. And, in a phrase which I have never forgotten, he said that ever since the industrial revolution began, ever since the work ethic became so important to us, it has always been "jam tomorrow and never jam today"; but that at some point in the future people were going to start asking for "jam today." We may now have reached that period of time.

The Effect of Politics on Universities

The second aspect of the "cultural revolution" is a new emphasis upon the political, a new emphasis upon ideology, a new emphasis upon judging programs and judging people by their political attitudes and affiliations. These two aspects of the "cultural revolution"—and I think they are somewhat in conflict with each other—will have very serious implications for higher education. Higher education is based upon the work ethic. Students study for years and years, and only later get their rewards. But when students want instant gratification and equality of results, it is quite different from the older idea of equality of opportunity rather than equality of results. And, also, when you bring politics into a university, it makes it a much different place; and, from an intellectual point of view, I think a much less satisfactory place. Higher education fought for centuries against the control of the state and the control of the church to develop its own autonomy, and to set up standards of objectivity in an effort at the constant discovery of new truth. But when politics comes into higher education and when ideology becomes a test, rather than the search for the truth, it disturbs higher education enormously. We see some of the consequences of this new "cultural revolution" on many campuses around the country already.

We are in trouble also because we are ending our period of great growth. Since 1870, we have doubled the number of students in higher education every ten to fifteen years, and in the 1960's we went from three million students (on a full-time-equivalent basis) to six million in one decade. This duplicated all the growth between 1636 and 1960. We have some growth ahead in the 1970's, about a 50 percent increase rather than a 100 percent increase. Then in the 1980's, for the first time since Harvard was founded, there will be no increase whatsoever in the number of students for an entire decade. In fact, in some years in the 1980's, for demographic reasons, the number of students will go down. And then again in the 1990's there will be an increase as the grandchildren of the GI's come along. But, beyond the year 2000, higher education will be growing with American society rather than ahead of it. The slowing of growth will make it harder to adapt to new ideas and to bring in so many young faculty.

Serious Financial Problem

Additionally, there is a serious financial problem. In 1960, higher education spent 1 percent of the gross national product. In the intervening period it has gone up to 2.5 percent of the GNP —a fantastic increase; and by the end of the decade it will be pushing toward 3 percent. And the higher that percentage goes, the more resistance there is on the part of the American people to meeting that bill. Also, new priorities are before the American people: to renovate our cities, to conserve our physical environment and to do many, many other things. Likewise, it is going to become more and more evident to the American people that higher education does not increase its productivity as do many other segments of American society. And since we do not increase our productivity, our prices rise faster than prices in general. Our Carnegie Commission has had a study made by the Brookings Institution which shows that the cost per student per year has risen at the rate of general inflation plus 2.5 percent per year. This rising cost per student has been partially hidden by the rapid growth in the numbers of students. We have asked for more money each year on the grounds that we had more students, but in the 1980's we are going to be faced with a different situation. We will have no more students, yet our costs will rise with inflation plus 2.5 percent per year. If you accumulate this 2.5 percent a year for a decade, you get almost a one-third increase in cost. By 1980 we will be spending about $40 billion (in 1970 dollars) a year on higher education, and because of this productivity factor we will have to be asking for about another $12 billion (in 1970 dollars) from American society in 1990—with no increase in the number of students. This productivity factor is going to be catching up with us, so that I do not think that the financial problem of today is a short-term one. I think higher education faces a financial problem for at least the next two decades.

I would like to mention one other factor affecting higher education and causing this "time of troubles." There is a change in the labor market situation. Historically, except for deep depressions, college graduates could always find suitable jobs—jobs that fitted their training. We are now in a transition period in which we have a surplus in some places and a deficit in others. But, before this decade is out, we are going to face a general surplus. The United States Department of Labor estimates that in 1980 only 20 percent of the jobs in the nation will require more than a high school education. And yet we already have 50 percent of our young people going beyond high school into college, and prospectively more than that. Now there is a difference between the flow and the stock you have on hand. The flow changes the stock only slowly but quite obviously, in the long run if you are going to have two out of three young people going to college and only one job in five requiring any kind of college training, you are facing a surplus.

A Surplus of Educated People

And this is going to mean important things for higher education. The public is going to ask why we should spend so much money on higher education when we have more graduates than we can absorb already. A lot of graduates are not going to get the jobs that they expected and we will face somewhat the same situation that has occurred in some other countries around the world—a surplus of educated people. Another impact: historically, wage and salary differentials have been narrowing, so that the people doing the dirty common labor get income more

nearly comparable to what trained people in the offices do. As we get this surplus of college graduates, those differentials are going to narrow very, very quickly. Already you can make more money as a garbage collector in the city of San Francisco than you can as an assistant professor in the medical school on the San Francisco campus. And that is going to be happening more and more as you train people out of being common laborers and train them into office occupations. Another implication: historically, we tried to fit the education to the job. In the future, we may be fitting the jobs to the education of the labor force. For example, when a secretary has more education, she is often given more responsibility. This is going to happen throughout American society, and employers are going to have to be prepared to make jobs more interesting, to develop more rotation among assignments, and to assign more responsibility.

These are some of the forces at work which are creating this "time of troubles" for higher education after a "golden century." But within higher education we have four areas which are still quite prosperous, are still growing, still have a great future before them. One of these areas is that segment comprised by the community colleges. The community colleges are politically increasingly popular in state after state. They are generally well respected in their communities.

The second great expansion is going to be in the area of external degrees, of off-campus degrees as are now being given in England through its Open University. I expect a vast increase in the amount of adult education going on across the country, until we really do approach a "learning society" where most of the people, most of the time, are engaged in some sort of learning process.

Another area with a great future is the area of the new electronic technology. We are now facing the fourth great revolution in technology affecting education. The first was when the role of teacher was created and some of instruction was moved from the family into a classroom, however informal. And then the second revolution was when writing evolved; instead of just having oral instruction, you also had written instruction. The third came five centuries ago with the printing press. And now the fourth revolution is coming with the new electronics. As cable TV, computer-assisted instruction, and particularly the video-cassette become more generally available, it becomes possible to turn every living room in the nation into a classroom for higher education.

Education for the Health Professions

And the fourth area is the health professions. As our Carnegie Commission was surveying all of higher education and preparing to make recommendations on its future, we singled out the health professions as an area for particular study because we thought that the health professions were the ones that perhaps had the greatest contributions to make to society and perhaps also to higher education. The health professions within higher education are in a period of comparative prosperity, even as much of the rest of higher education is in its worst depression, and for several good reasons. There is a great demand for more trained people in the health area. The estimates of the Department of Labor are that, if past trends were to continue (and they will not, since adjustments will take place), by the end of the decade of the 1970's we would have a deficit of one million people in the health care fields. Our Carnegie Commission has recommended—and this has been accepted now as national policy—that there should be an expansion of 50 percent in the output of medical doctors in this decade, 20 percent of dentists, and substantial increases of other health care personnel.

Student interests reflect changing situations very quickly. We had a study made last fall of what was happening to applications and to enrollments. Student enrollments in engineering went down 15 percent in one year from 1970 to 1971. In education, they went down 15 percent. In forestry, tied to ecology, they went up 40 percent from the fall of 1970 to the fall of 1971. Nursing had an increase of 19 percent from one year to the next. The biological sciences had a 17 percent increase from one year to the next. In terms of applications, not enrollments, the most phenomenal increase was for law schools where applications rose a little over 50 percent from one year to the next. Medical school applications went up 35 percent from one year to the next. Students are reflecting new possibilities for employment opportunities and for service oppor-

tunities in several areas, including the health professions.

A second reason why medical education is going to be more important within higher education is this: higher education once relied upon its schools of agriculture as the best way it had to persuade the public it was useful, and now, in an urbanized society, the health service schools will take their places. Through the health professions, higher education can make a contribution to everyone—an appreciated contribution to everyone, as the schools of agriculture once did.

And, finally, the health professions are becoming increasingly important as intellectual centers within higher education. There are today no other centers in higher education which draw together so many strands of intellectual activity as do the health professions. Increasingly the health professions are becoming the greatest single focal point of scientific endeavor.

So, in conclusion, may I say this: In the last century in the United States we were involved in modernizing our society in the sense of industrializing it and expanding our democracy. And, during this period of time, we added immensely to the capital investment of the nation. We also drew in more and more labor into our cities and industries from Europe and elsewhere around the world, from our farms, and women from our homes. It was a period of great industrialization, great urbanization, great modernization; and higher education exploded along with these trends. And what may be the theme of the next century for American society and for higher education? I would like to suggest that the theme, rather than being modernization, may be "humanization"—more people given greater access to a high-quality life, more attention being paid to the individual needs of people. Whether or not this will be a major theme for American society, it is already a major theme for higher education: to bring in more young people and to give them greater access to the opportunities made available through higher education, and also to pay more attention to the individual needs of students.

In the next century, rather than putting as much concentration as we did in the last century on capital accumulation or the same emphasis upon recruiting labor for the modernized sector of our economy, the emphasis is going to be comparatively more upon increasing individual human capability. The fastest growing part of our society currently is that segment concerned with increasing human capability. We are now spending 8 percent of our GNP on formal education; we are spending 7 percent of our GNP on health, and 3 percent of our GNP on research and development, totaling 18 percent. As short a time ago as 1955, we were spending 11 percent in these three areas. In about 15 years, we have increased the proportion of our national effort devoted to these three areas by more than 50 percent and the percentage is still rising. At the present time—to show how important these activities have become—only 3 percent of our GNP is represented by primary agricultural production. Education and health, each by itself, now constitutes twice as great a proportion of the GNP as does farming; and research and development by itself equals farming. The health sciences relate to all three of these endeavors: to research and development, to health care and to education. And so, while the "golden century" may be behind us for higher education as a whole, I would like to suggest that there will be some golden decades ahead for the health sciences and the health professions; golden decades in terms of the opportunities to do more and more for the American people. The health sciences are not only more central to the welfare of our people as a whole but also more central to the conduct of higher education as our best contact with the people, our best service to the people. It may come to be that the greatest help that higher education will receive in this "time of troubles" will be from the success of the health professions.